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10/623,518	07/22/2003	Miki Nagano	116625	5827

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EXAMINER

TRAN, TUYETLIEN T

ART UNIT PAPER NUMBER

2179

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/623,518

Applicant(s)

NAGANO ET AL.

Examiner

TuyetLien (Lien) T. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2003.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-30 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 22 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 5/3/04.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This application has been examined. The original claims 1-30 are pending. The examination results are as follows.

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copies of the priority documents have been received.

Information Disclosure Statement

2. The examiner has considered the documents listed in forms PTO-1449 submitted with the Information Disclosure Statements (IDSs) received on 05/03/2004 (see the attached forms PTO-1449).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, 7-8, 12, 14-20, 22-23, 27, 29-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Shigeta (Pub No US 2001/0050679 A1; hereinafter Shigeta).

As to claim 1, Shigeta teaches:

A display system (e.g., a display control system, see [0002]) comprising:

a plurality of terminals (e.g., image signal source 1a to 1c, see Fig. 1; note that the image signal sources can be personal computers such as PC_A 104, PC_B 110 as shown in Fig. 10), each terminal having a screen capture function (e.g., graphics drawing unit 6a, 6b, see Fig. 2), and sending image data, captured using the screen capture function (e.g., image signals are sent from the image/audio transmitting unit 9a, 9b, see Fig. 2 and [0075]), over a network (e.g., devices such as 113 and 110 are communicated to each other through a 1394 hub 108, see Fig. 10); and

a network interactive display device (e.g., image display device 30, see Fig. 1), including a display (e.g., image display unit 36, see Fig. 1), receiving the captured image data transmitted from the terminal (e.g., receiving image signals sent from units 9a and 9b, see [0075] and Fig. 2) through the network (e.g., communication line 24, see Fig. 1), and having a multi-window screen presentation function (e.g., see Fig. 6) for synthesizing the captured image data into single screen multi-window format data to be displayed on a display screen of the display (e.g., see [0087]),

wherein, as processes required to present the single screen multi-window format data on the display screen of the display of the network interactive display device (e.g., see [0006] and [0135]), the terminal performs a size conversion process of an image size of the image data captured using the screen capture function (e.g., see [0102]) and the network interactive display device (e.g., image display unit 36, see Fig. 1) acquires the captured image data subsequent to the size conversion thereof from the terminal (e.g., see [0123]), and synthesizes the received captured image data (e.g., see [0087]).

As to claim 5, Shigeta teaches:

A network interactive display device (e.g., image display device 30, see Fig. 1) connected to each of a plurality of terminals (e.g., image signal source 1a to 1c, see Fig. 1; note that the image signal sources can be personal computers such as PC_A 104, PC_B 110 as shown in Fig. 10) through a network (e.g., devices such as 113 and 110 are communicated to each other through a 1394 hub 108, see Fig. 10), each terminal having a screen capture function (e.g., graphics drawing unit 6a, 6b, see Fig. 2), the network interactive display device (e.g., device 30 in Fig. 1) comprising:

- a display (e.g., image display unit 36, see Fig. 1);

- a communication unit for communicating in a two-way fashion with each of the terminals (e.g., communication unit 40 and Image/audio receiving unit 32, see Fig. 1; note that device 30 can transmit and receive signal, e.g., see step S2 and S5 in Fig. 3); and

- a display control unit (e.g., image display processing unit 35, see Fig. 1),

wherein the communication unit (e.g., unit 40 and 32 in Fig. 1) receives the image data which has been captured by each terminal through the screen capture function (e.g., see [0087]) thereof, and which has been size converted to a predetermined image size by each terminal (e.g., see [0102] and [0123]), and the display control unit has a multi-window screen presentation function (e.g., see Fig. 6) for synthesizing the captured image data received by the communication unit into single screen multi-window format data to be displayed on a display screen of the display (e.g., see [0087]).

As to claim 20, Shigeta teaches:

A network interactive display device (e.g., image display device 30, see Fig. 1) connected to each of a plurality of terminals (e.g., image signal source 1a to 1c, see Fig. 1;

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note that the image signal sources can be personal computers such as PC_A 104, PC_B 110 as shown in Fig. 10) through a network (e.g., devices such as 113 and 110 are communicated to each other through a 1394 hub 108, see Fig. 10), each terminal having a screen capture function (e.g., graphics drawing unit 6a, 6b, see Fig. 2), the network interactive display device (e.g., device 30 in Fig. 1) comprising:

- a display (e.g., image display unit 36, see Fig. 1);

- a communication unit for communicating in a two-way fashion with each of the terminals (e.g., communication unit 40 and Image/audio receiving unit 32, see Fig. 1; note that device 30 can transmit and receive signal, e.g., see step S2 and S5 in Fig. 3); and

- a display control unit (e.g., image display processing unit 35, see Fig. 1),

wherein the display control unit (e.g., unit 35 in Fig. 1) has a multi-window screen presentation function for synthesizing the captured image data, captured by each terminal through the screen capture function and received by the communication unit, into single screen multi-window format data to be displayed on display screen of the display of the network interactive display device (e.g., see [0087]).

As to claim 2, Shigeta further teaches wherein the network interactive display device (e.g., image display device 30, see Fig. 1) divides the display screen of the display into windows of the number equal to the number of terminals to be displayed (e.g., the display screen F1 is divided into 3 display areas F2, F3, F4 to display images coming from PC1, PC2, DVD, see Fig. 6 and Fig. 7), determines a display size of the window assigned to each terminal to be displayed (e.g., resolution for each device PC1, PC2, DVD, see Fig. 7), and sends information of the display size to the terminal (e.g., step S2 in Fig. 3), and ,

wherein the terminal performs the size conversion process on the image size of the captured image data to the received display size when the terminal receives the display size (e.g., see [0102]).

As to claim 3, Shigeta further teaches wherein, in addition to the size conversion process on the image data captured using the screen capture function (e.g., see [0102]), the terminal further performs a color conversion process on the captured image data in accordance with a color count of the display of the network interactive display device before sending the captured image data to the network interactive display device (e.g., the image signal sources converts image data to display attribute format such as color properties, a number of gradients, 8-bit gradients, see [0090], [0091], and [0101]).

As to claim 4, Shigeta further teaches wherein the network interactive display device (e.g., image display device 30, see Fig. 1) also sends the color count of own display to the terminal when sending the display size to the terminal (e.g., display attributes information sent from display device including a number of gradients, color properties, see [0090] and [0091]), while the terminal performs the color conversion process in response to the color count received from the network interactive display device (e.g., [0090] and [0102]).

As to claims 7 and 22, Shigeta further teaches wherein the terminal that provides the captured image data to be displayed on the display screen of the display is selected in a two-way communication of the communication unit (e.g., communication unit 40 and Image/audio receiving unit 32, see Fig. 1; note that device 30 can transmit and receive

signal, e.g., see step S2 and S5 in Fig. 3) by one of the network interactive display device and the terminal (e.g., a mouse or digitizer, see [0089]).

As to claims 8 and 23, Shigeta further teaches wherein the display control unit has an expansion display function for expanding a predetermined window from among a plurality of windows forming a multi-window screen displayed on the display screen of the display (e.g., see Fig. 8).

As to claims 12 and 27, Shigeta further teaches wherein the image captured data received from the terminal is obtained by designating the whole or a portion of the display screen of the terminal (e.g., see Fig 6).

As to claims 14 and 29, Shigeta teaches further comprising a display size determining unit that divides the display screen of the display into windows of the number equal to the number of terminals to be displayed (e.g., the display screen F1 is divided into 3 display areas F2, F3, F4 to display images coming from PC1, PC2, DVD, see Fig. 6 and Fig. 7, [0006] and [0135]), and determines a display size of the window to which the terminal to be displayed is assigned (e.g., resolution for each device PC1, PC2, DVD, see Fig. 7), and a controller that sends the display size determined by the display size determining unit to the corresponding terminal (e.g., step S2 in Fig. 3) through the communication unit (e.g., communication unit 40 and Image/audio receiving unit 32, see Fig. 1), wherein the controller receives, through the communication unit (e.g., unit 40 and 32 in Fig 1), the captured image data, having the converted size equal to the display size of the window assigned to the terminal, from the terminal to which the display size is sent

(e.g., see [0102]), and controls the display control unit to synthesize the received captured image data into single screen multi-window format data to be displayed on the display screen of the display (e.g., see [0087]).

As to claims 15 and 30, Shigeta further teaches wherein an aspect ratio of the window assigned to the terminal to be displayed is equalized to an aspect ratio of the display screen of the display of the terminal (e.g., note that display attributes for each area also relates to aspect ratio, see [0090] and [0091]).

As to claim 16, Shigeta further teaches, wherein, through the communication unit (e.g., communication unit 40 and Image/audio receiving unit 32, see Fig. 1), the controller also sends a display color count of the display to the terminal when sending the display size to the terminal, and receives the captured image data having the converted size equal to the display size of the window assigned to the terminal and having the display color count converted to the display color count of the display of the network interactive display device, from the terminal to which the display size and the display color count have been sent (e.g., note that display attributes for each area also relates to color properties, a number of gradients, 8-bits gradients, see [0090], [0091], and [0101]), and controls the display control unit to synthesize the received captured image data into single screen multi-window format data to be displayed on the display screen of the display (e.g., see [0087]).

As to claim 17, Shigeta further teaches the terminal (e.g., image signal source 1a to 1c, see Fig. 1; note that the image signal sources can be personal computers such as PC_A 104, PC_B 110 as shown in Fig. 10) comprising:

- a display (e.g., PC display_A 403, PC display_B 409 in Fig. 14);

- a communication unit that communicates in a two-way fashion with the network interactive display device (e.g., communication unit 10a, 10b and image/audio transmitting unit 9a, 9b, see Fig. 2);

- a screen capture processor that captures the content displayed on the display screen of the display (e.g., graphics drawing unit 6a, 6b, see Fig. 2);

- an image converter which converts the image data captured by the screen capture processor to data of a predetermined image size (e.g., see [0102] and [0123]); and

- a controller that sends the captured image data, size converted by the image converter, from the communication unit to the network interactive display device (e.g., see [0136]),

wherein the terminal (e.g., image signal source 1a to 1c and devices 104, 110 in Fig. 1 and Fig. 10) generates the captured image data that is to be displayed on one of the multi windows displayed on the display screen of a display of the network interactive display device (e.g., see [0087]).

As to claim 18, Shigeta further teaches wherein the display screen of the display of the network interactive display device is divided into windows of the number equal to the number of terminals to be displayed (e.g., the display screen F1 is divided into 3 display areas F2, F3, F4 to display images coming from PC1, PC2, DVD, see Fig. 6 and Fig. 7), a

display size of the window assigned to each terminal to be displayed is determined (e.g., resolution for each device PC1, PC2, DVD, see Fig. 7), and the image converter converts the image data captured by the screen capture processor to data of the display size assigned to own terminal (e.g., see [0102]).

As to claim 19, Shigeta further teaches wherein the image converter (e.g., graphics drawing unit 6a, 6b in Fig. 2) performs a color conversion process on the captured image data to match the display color count of the display of the network interactive display device in addition to the size conversion process (e.g., the image signal sources converts image data to display attribute format such as color properties, a number of gradients, 8-bit gradients, see [0090], [0091], and [0101]), and the controller sends the captured image data, which has been subjected to the size conversion process and the color conversion process (e.g., see [0087]), from the communication unit (e.g., image/audio transmitting unit 9a, 9b and communication unit 10a, 10b in Fig. 2) to the network interactive display device (e.g., image display device 30, see Fig. 1).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6, 10-11, and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeta in view of Matsumoto et al. (Patent No US 6,473,088 B1, hereinafter Matsumoto).

As to claims 6 and 21, Shigeta teaches the limitations of claims 5 and 20 for the same reasons as discussed with respect to claims 5 and 20 above. However, Shigeta fails to expressly teach an insertion function for inserting a new window into a currently display screen to display the new window. Matsumoto, though, teaches wherein the display control unit (e.g., display drive controller 900 in Fig. 1) has an insertion function for inserting a new window into a current display screen to display the new window (e.g., icon I1, I2 allow a new window to be displayed on a currently display screen, see Fig. 11 and col. 11, lines 30-58).

It would have been obvious to one of ordinary skill in the art, having the teachings of Shigeta and Matsumoto before him at the time the invention was made to have utilized the insertion function as taught by Matsumoto to the multi-area display system as taught by Shigeta so that when an erased or minimized windows are desired to be inserted into a currently display screen, the desired windows can be opened without having to restart the display system.

As to claims 10 and 25, Shigeta teaches the limitations of claims 5 and 20 for the same reasons as discussed with respect to claims 5 and 20 above. However, Shigeta fails to expressly teach an erase function for erasing a predetermined window from among a plurality of windows forming a multi-window screen displayed on the display screen of the

display. Matsumoto, though, teaches wherein the display control unit (e.g., display drive controller 900 in Fig. 1) has an erase function for erasing a predetermined window from among a plurality of windows forming a multi-window screen displayed on the display screen of the display (e.g., window area for input 4 is erased or minimized when the control unit detects a power saving mode, see Fig. 13 and col. 12, lines 63-67).

It would have been obvious to one of ordinary skill in the art, having the teachings of Shigeta and Matsumoto before him at the time the invention was made to have utilized the erase function as taught by Matsumoto to the multi-area display system as taught by Shigeta to improve the visibility of the display screen by erasing the display area of invalidating windows.

As to claims 11 and 26, Shigeta and Matsumoto teach the limitations of claims 10 and 25 for the same reasons as discussed with respect to claims 10 and 25 above. Matsumoto further teaches wherein the predetermined window is selected by one of the network interactive display device and the terminal (e.g., display pointer 702) in a two-way communication of the communication unit (e.g., two-way communication between source devices 101 to 104 and bus controller 1000 to the display device 900, see Fig. 1) thereof. Thus, combining Shigeta and Matsumoto would meet the claimed limitations for the same reasons as discussed in claims 10 and 25 above.

7. Claims 9 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeta.

As to claims 9 and 24, Shigeta teaches the limitations of claims 5 and 20 for the same reasons as discussed with respect to claims 5 and 20 above. Shigeta fails to expressly teach a single-window screen selection function for switching the display screen from a predetermined window from among a plurality of windows forming a multi-window screen displayed on the display screen of the display to a single-window full screen. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the a single-window function for switching the display screen from a predetermined window from among a plurality of windows forming a multi-window screen displayed on the display screen of the display to a single-window full screen, in view of Shigeta, because Shigeta suggests to the skilled artisan that the size and position of the display area can be changed (e.g., see [0089]) to optimize the full resource of the display and to get user's attention on the window of interest.

8. Claims 13 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeta in view of Mondal (Pub No US 2003/0110244 A1, hereinafter Mondal).

As to claims 13 and 28, Shigeta teaches the limitations of claims 5 and 20 for the same reasons as discussed with respect to claims 5 and 20 above. However, Shigeta fails to expressly teach that the captured image data received from the terminal is obtained by detecting and capturing only a change on the display screen of the terminal. Mondal, though, teaches the captured image data received from the terminal is obtained by detecting and capturing only a change on the display screen of the terminal (e.g., see [0022]).

It would have been obvious to one of ordinary skill in the art, having the teachings of Shigeta and Mondal before him at the time the invention was made to have utilized the method and function of only transmitting the changes in display data as taught by Mondal to the multi-area display system as taught by Shigeta to reduce the amount of data transmitted to the maintenance computing system so as to reduce the affect on network bandwidth (e.g., see Mondal [0022]).

Conclusion

The prior art made of record on form PTO-892 and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. § 1.111(c) to consider these references fully when responding to this action. The documents cited therein teach network interactive display control.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TuyetLien (Lien) T. Tran whose telephone number is 571-270-1033. The examiner can normally be reached on Mon-Friday: 7:30 - 5:00, off on alternating Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Weilun Lo can be reached on 571-272-4847. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

T.T
11/09/2006

Lien Tran
Examiner
Art Unit 2179

BA HUYNH
PRIMARY EXAMINER